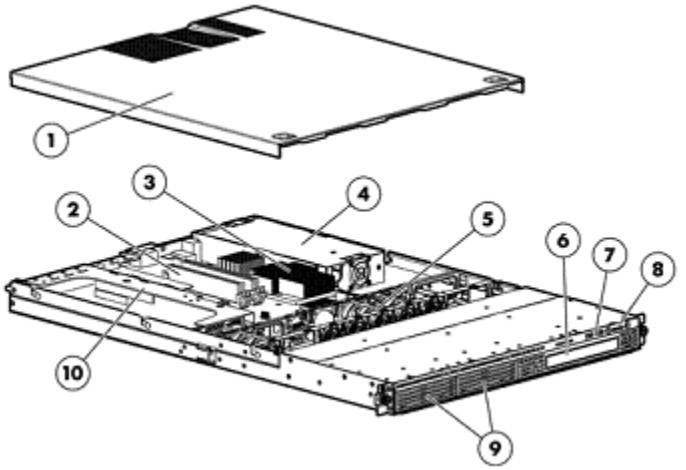
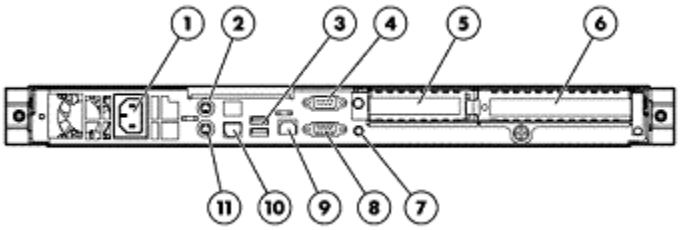
Overview





Front View:

1. Cover
2. Four PC2-6400 UB ECC DDR2 Memory Slots
3. Processor Socket (Intel® Xeon®, Core™2, Pentium® or Celeron®)
4. Power Supply (350 Watt)
5. 3 Non Hot Plug Dual Rotor Fans
6. Optional 12.7mm DVD-ROM, or DVD-RW Drive
7. Two upfront USB connectors
8. Power Button, UID Button, and Front LED Indicators
9. Support for up to two Non-Hot Plug SATA or SAS Hard Drives
10. Two PCI express Slots (2 PCI-Express x8 connectors standard, one x8, one x4 Lanes)

Rear View:

1. Power supply cable socket
2. Mouse connector
3. USB connectors (2)
4. Serial connector
5. Expansion slot 2, PCI-e x4, low-profile, half-length
6. Expansion slot 1, PCI-e x8, Full high, Full-length (PCI-X optional)
7. UID button/LED
8. Video connector
9. DL120 G5 HP Lights Out 100c management NIC port (optional)
10. NIC Port
11. Keyboard connector

What's New

- Adding Intel® Xeon® 5200 and 7400 processor sequence

At a Glance

The HP ProLiant DL120 G5 Server is an entry-level rack-optimized server providing you with all confidence of a HP ProLiant server. The single processor, 1U server is ideal for single-application IT infrastructure, web and edge-of-network applications. The HP ProLiant DL120 provides two PCI-Express slots with an option to replace one PCI-Express slot with a PCI-X slot. Optional upgrades, including HP HBAs and Smart Array Controllers, provide support for SAS hard disk drives. An optional DL120G5 HP Lights Out 100c (LO100c) Remote Management Card provides cost-effective remote management from anywhere, anytime. Plus, you get the cost-effective solution of a single-processor platform with the performance advantages of dual-core or quad-core.

- Processor:
  - Intel® Xeon® 7400 processor sequence
  - Intel® Xeon® 5200 processor sequence
  - Quad-Core Intel® Xeon® 3300 processor sequence
  - Quad-Core Intel® Xeon® 3200 processor sequence
  - Dual-Core Intel® Xeon® 3100 processor sequence
  - Dual-Core Intel® Xeon® 3000 processor sequence
  - Dual-Core Intel® Core™2 E4600 processor
  - Dual-Core Intel® Pentium® E2160 processor
  -
  -

Overview

- Single-Core Intel® Celeron® 440 processor
- Single-Core Intel® Celeron® 420 processor
- Intel® 3200 Chipset with up to 1333MHz Front Side Bus (FSB)

- Memory:
  - Supports up to 8 GB of PC2-6400 (800 MHz) Unbuffered DDR2 ECC SDRAM Memory
  - 4 DIMM sockets
- Storage Controller:
  - Embedded SATA Controller with RAID 0/1 support
    NOTE: Transfer Rate: 1.5 Gb/s SATA
- Internal Drive Support:
  - Two 3.5" (Large Form Factor) SATA or SAS hard drives
    - SAS drives require optional SAS Host Bus Adapter (HBA) or Smart Array Controller
  - Internal storage capacity of up to 1.5TB (2 x 750GB SATA hard drives)
  - Optional DVD-ROM or DVD-RW optical drive
- Network Controller:
  - Embedded NC105i Gigabit Server Adapter
- Expansion Slots:
  - Two total slots:
    - (1) Full length PCI Express x8 slot (x8 connector)
    - Can be replaced with a full-length 64-bit /133MHz PCI-X slot
    - (1) Half-length, low-profile PCI Express x4 slot (x8 connector)
- USB 2.0 Ports:
  - Up to 5 Total: (2) front; (1) internal; (2) rear accessible ports
  - Internal USB port (optional) for flexible storage, security, or USB drive key deployment
- Management:
  - Standard Lights Out 100 IPMI 2.0 reporting
  - DL120G5 HP Lights Out 100c Remote Management Card (Optional)
  - Front Panel status LEDs including system health and UID
- Form Factor:
  - 1U (1.69" / 4.30 cm) Rack Mount Chassis
  - 27.5" (69.85 cm) Deep
  - New fixed mounting rails included with all models
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty. SAS Enterprise drives have a three-year warranty.
    NOTE: Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response. (3-1-1 warranty in AP and Brazil, excluding Japan). Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor
One of the following depending on Model

Quad-Core Processors

Quad-Core Intel® Xeon® processor X3360 (2.83GHz, 12MB L2 cache, 95 Watts, 1333MHz Front Side Bus FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Quad-Core Intel® Xeon® processor X3350 (2.66GHz, 12MB L2 cache, 95 Watts, 1333MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Quad-Core Intel® Xeon® processor X3330 (2.66 GHz, 6MB L2 cache, 95 Watts, 1333MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Quad-Core Intel® Xeon® processor X3320 (2.5GHz, 6MB L2 cache, 95 Watts, 1333MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Intel® Xeon® processor X3220 (2.4GHz, 8MB L2 cache, 1066Watts, MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Quad-Core Intel® Xeon® processor X3210 (2.13GHz, 8MB L2 Cache, 95 Watts, 1066MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Intel® Xeon® processor E5200 (2.50 GHz, 2 MB L2 cache, 65Watts, 800MHz Front Side Bus FSB, 2M)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Intel® Xeon® processor E7400 (2.80 GHz, 3MB L2 cache, 65Watts, 1066MHz Front Side Bus FSB, 3M) NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Dual-Core Processors

Dual-Core Intel® Xeon® processor E3120 (3.16 GHz, 6MB L2 cache, 65 Watts, 1333MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Dual-Core Intel® Xeon® processor E3110 (3.0GHz, 6MB L2 cache, 65 Watts, 1333MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Dual-Core Intel® Xeon® processor 3065 (2.33GHz, 4MB L2 Cache, 65 Watts, 1333MHz FSB)

Dual-Core Intel® Core™2 processor E4600 (2.4GHz, 2MB L2 cache, 800MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Dual-Core Intel® Pentium® processor E2160 (1.80GHz, 1MB L2 cache, 800MHz FSB)

Single-Core Processors

Single-Core Intel® Celeron® processor 440 (2.00GHz, 512KB L2 cache, 800MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Single-Core Intel® Celeron® processor 420 (1.60GHz, 512KB L2 cache, 800MHz FSB)
NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Standard Features

Cache Memory One of the following depending on Model	12 MB L2 Cache NOTE: For Models with Intel® Xeon® processor X3360, and X3350. 8 MB L2 Cache NOTE: For Models with Intel® Xeon® processor X3330, X3320, E3120, and E3110. 6 MB L2 Cache NOTE: For Models with Intel® Xeon® processor X3320 and E3110. 4 MB L2 Cache NOTE: For Models with the Intel® Xeon® processor 3065. 2 MB L2 Cache NOTE: For Models with the Intel® Core2 processor E4600. 1 MB L2 Cache NOTE: For Models with the Intel® Pentium processor E2160. 512 KB L2 Cache NOTE: For Models with the Intel® Celeron processor 440 and 420.	
Chipset	Intel® 3200 Chipset	
Memory Protection	ECC	
Memory One of the following depending on Model	Type	PC2-6400 (800MHz) Unbuffered ECC DDR2 SDRAM Interleaving optional (Enabled when DIMMs populated in pairs)
	DIMM Sockets	4
	Standard - Xeon 3065 and Pentium E2160 Models	1 GB (1 x 1 GB)
	Standard - Xeon 3320 Model	2 GB (2 x 1 GB)
	Maximum Memory	8 GB
Network Controller	Embedded NC105i Gigabit Server Adapter	

Standard Features

Expansion Slots	Technology	Bus Width***	Connector Width	Bus Number*	Device No.**	Form Factor	Notes
1 (Standard)	PCIe	X8	x8	0	1	Full length, full height slot	This PCIe slot can be replaced with optional PCI-X slot below
2 (Standard)	PCIe	X4	x8	0	28	Low profile slot	
1 (Optional)	PCI-X (133MHz, 3.3Volt)	64-bit	N/A	0	1	Full length, full height slot	

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus)

*** Indicates the number of physical electrical lanes running to a PCI-e connector.

Storage Controllers	Integrated Intel® 82801IR Serial ATA Host Controller with RAID 0/1 support. NOTE: The non-hot-plug drive option kits include a SATA cable along with the drive itself. This cable allows the drives to be connected to the embedded SATA controller. The cables are point to point. SAS and SATA controllers available via PCI card option NOTE: If a HBA or SAS controller is ordered for SATA RAID or SAS support, the 4 Lane SAS/SATA Host Fan Out Cable Kit (P/N 457692-B21) must also be ordered to connect the drives.		
Storage	Optical Drive	Optional 12.7mm DVD-ROM, or DVD-RW Drive	
	Hard Drives	Non-Hot Plug SATA /SAS	Up to 2 non-hot plug SATA/SAS 3.5" drives NOTE: SAS requires optional HBA or SA card.
Maximum Internal Storage	Non-Hot Plug SATA	1.5TB	2 x 750GB SATA
Type	Non-Hot Plug SAS	900GB	2 x 450GB SAS
Interfaces	Serial	1	
	USB 2.0	5 (2 front, 1 internal, 2 rear) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html	
	Graphics	1 (rear)	
	Keyboard	1	
	Mouse	1	
	Management	1 for optional LO100c	
	Network RJ-45	1	

Standard Features

Graphics	32MB shared supporting 1600x1200x16M resolution	
Form Factor	Rack (1U), (1.69 in/4.30 cm), 27.5" deep	
Remote Management	Lights-Out 100c	Lights Out LO100c is a Remote Management Card (RMC) for ProLiant 100 series servers that do not have embedded LO100i. The LO100c has all the features of the LO100i Advanced license and allows customers, or their service providers, to remotely manage ProLiant servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe. With LO100c, users can acquire complete remote control with Virtual KVM (graphical hardware-based, remote console). Users can also access the server's serial console, control system power, update system firmware and software, as well as monitor system environmental conditions. The LO100c remote management card can be accessed from a web browser or command line interface. This virtual "at-the-server" functionality means administrators stay in control of remote HP ProLiant 100 series servers. The HP Lights-Out100c consists of a management processor and firmware that provides cost-effective, entry-level lights-out functionality, basic system board management functions, and diagnostics. NOTE: For more information, please refer to the QuickSpecs for the LO100c found at: http://h18004.www1.hp.com/products/servers/management/remotemgmt.html
Core Infrastructure Management	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq software and drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through software and drivers download pages website at: http://www.hp.com/go/support.
Industry Standard Compliance	ACPI 3.0 PCI 2.3 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0 IPMI 2.0	

Standard Features

Intelligent Manageability	Automatic Server Recovery (ASR) Integrated Management Log Drive Parameter Tracking (with Smart Array Controllers) Dynamic Sector Repairing (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SAS hard drives, and memory) BIOS Serial Console Front and Rear Unit ID (UID) button/LED
Security	Power-on password Keyboard password USB Port control Removable DVD-ROM Drive Assembly (optional) Dedicated LO100c management NIC port (optional) Administrator's password

Server Power Cords	North America	One 6' Highline (IEC-IEC) power cord ships standard
	Japan	One 6' Highline (IEC) power cord and one 6' Lowline power cord ship standard
	ROW	One 6' Highline (IEC) power cord ships standard

NOTE: HP ProLiant DL120 G5p server ship standard worldwide with a C13 to C14 2M Highline jumper cord. Japanese models also include a 2M Lowline power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific cord. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.

Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html
System Fans	3 dual rotor fans ship standard. 3 dual rotor fans total supported internally.
Required Cabling	For required cabling information, refer to the Web site at: http://h10010.www1.hp.com/wwpc/us/en/sm/WF05a/15351-15351-3328412-241644-241475-3579703.html.
Operating Systems and Virtualization Software	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES)

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/supportos and our driver download page http://www.hp.com/support/DL120G5

Standard Features

Rack Airflow Requirements	Rack 10000 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: • Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). • Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18004.www1.hp.com/products/servers/proliantdl120/index.html.
Rack Kit	The DL120 G5 Fixed Rail System supports installation in racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 24" - 36". Installation into Telco 2 post, and 4 post, or threaded holes racks requires a 3rd party option kit. Go to: www.racksolutions.com for more information.
HP Factory Express Capabilities	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

Standard Features

Service and Support

HP Care Pack Services provide total care and support expertise with committed response times designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server that are purchased at the same time or afterward and internal to the enclosure. It also includes the 22-inch and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of support solutions provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has ProLiant server support offers to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- Support - 3 Year 9x5 Next Business Day coverage, excluding HP holidays only
- Deployment Service - HW Installation only

Enhanced Service - optimize service level to increase IT performance and availability.

- Support - 3 Year 13x5 Same Business Day, 4-Hour response coverage only

Refer to the information on the Installation of a ProLiant on the ProLiant Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

HP DL120 G5 E3110, 1GB, A160, SATA 533983-xx1	Processor	Intel® Pentium® processor E3110 (3.0 GHz, 6MB L2 cache, 65Watts, 1333 FSB)
	Cache Memory	4MB L2 Cache
	Memory	1 GB (Standard) to 8 GB (Maximum) of ECC PC2-6400 Unbuffered DDR2 SDRAM Memory
	Network Controller	Embedded NC105i Gigabit Server Adapter
	Storage Controller	Intel 82801 IR Integrated Serial ATA Host Controller
	Hard Drives	1 x 160GB 3.5" Non-hot-plug SATA
	Internal Storage	Non-Hot Plug SAS: 600GB maximum Non-Hot Plug SATA: 1.0TB maximum NOTE: SAS requires optional PCI Controller
	Optical Drive	Optional
	Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	Rack (1U), (1.69 in/4.30 cm)

HP DL120 G5 X3330, 2GB, A160, SATA 533984-xx1	Processor	Intel® Pentium® processor X3330 (2.66GHz, 6MB L2 cache, 95 Watts, 1333 FSB)
	Cache Memory	6MB L2 Cache
	Memory	2 GB (2x1 GB) (Standard) to 8 GB (Maximum) of ECC PC2-6400 Unbuffered DDR2 SDRAM Memory
	Network Controller	Embedded NC105i Gigabit Server Adapter
	Storage Controller	Intel 82801 IR Integrated Serial ATA Host Controller
	Hard Drives	1 x 160GB 3.5" Non-hot-plug SATA
	Internal Storage	Non-Hot Plug SAS: 600GB maximum Non-Hot Plug SATA: 1.0TB maximum NOTE: SAS requires optional PCI Controller
	Optical Drive	Optional
	Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	Rack (1U), (1.69 in/4.30 cm)

Models

DL120 E2160 1GB A160 SATA 465475-xx1	Processor	Intel® Pentium® processor E2160 (1.80GHz, 1MB L2 cache, 800MHz FSB)
	Cache Memory	1MB L2 Cache
	Memory	1 GB (Standard) to 8 GB (Maximum) of ECC PC2-6400 Unbuffered DDR2 SDRAM Memory
	Network Controller	Embedded NC105i Gigabit Server Adapter
	Storage Controller	Intel® 82801IR Integrated Serial ATA Host Controller
	Hard Drives	1 x 160GB 3.5" Non-hot-plug SATA
	Internal Storage	Non-Hot Plug SATA: 1.5TB maximum NOTE: SAS requires optional PCI Controller.
	Optical Drive	Optional
	Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	Rack (1U), (1.69 in/4.30 cm)
DL120 3065 1GB A160 SATA 465476-xx1	Processor(s)	Intel® Xeon® processor 3065 (2.33GHz, 4MB L2 cache, 1333MHz FSB)
	Cache Memory	4MB L2 Cache
	Memory	1 GB (Standard) to 8 GB (Maximum) of ECC PC2-6400 Unbuffered DDR2 SDRAM Memory
	Network Controller	Embedded NC105i Gigabit Server Adapter
	Storage Controller	Intel® 82801IR Integrated Serial ATA Host Controller
	Hard Drives	1 x 160GB 3.5" Non-hot-plug SATA
	Internal Storage	Non-Hot Plug SATA: 1.0TB maximum NOTE: SAS requires optional PCI Controller.
	Optical Drive	Optional
	Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	Rack (1U), (1.69 in/4.30 cm)
DL120 X3320 2GB A160 SATA 469378-xx1	Processor(s)	Intel® Xeon® processor X3320 (2.50GHz, 6MB L2 cache, 1333MHz FSB)
	Cache Memory	6MB L2 Cache
	Memory	2 GB (2x1 GB) (Standard) to 8 GB (Maximum) of ECC PC2-6400 Unbuffered DDR2 SDRAM Memory
	Network Controller	Embedded NC105i Gigabit Server Adapter
	Storage Controller	Intel® 82801IR Integrated Serial ATA Host Controller
	Hard Drives	1 x 160GB 3.5" Non-hot-plug SATA
	Internal Storage	Non-Hot Plug SATA: 1.0TB maximum NOTE: SAS requires optional PCI Controller.
	Optical Drive	Optional
	Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	Rack (1U), (1.69 in/4.30 cm)

Models

Country Code Key	xx=00	North America
	xx=20	Brazil
	xx=29	Japan
	xx=37	APD (Asia excluding Japan)
	xx=42	EURO (Europe / Middle East / Africa)
	xx=AA	PRC

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Models	DL120 CTO (Configure-To-Order) Non-Hot Plug Chassis	468653-B21
	Includes:	
	Embedded NC105i Gigabit Server Adapter	
	1 full length PCI Express x8 slot (x8 lane) and 1 half length low profile PCI Express x8 slot (x4 lane)	
	Intel® 82801IR Integrated Serial ATA Host Controller	
	Rack (1U) form factor, (1.69 in/4.30 cm)	
	Fixed, mounting rails	

Step 2: Choose Required Options (only one of the following from each list unless other noted)

Processors	Intel® Celeron 420 processor (1.60GHz, 512KB L2 cache, 800MHz FSB), FIO Kit	450125-L22
	Intel® Celeron 440 processor (2.00GHz, 512KB L2 cache, 800MHz FSB), FIO Kit	468963-L22
	Intel® Pentium E2160 processor (1.80GHz, 1MB L2 cache, 800MHz FSB), FIO Kit	455035-L22
	Intel® Core2 E4600 processor (2.4GHz, 2MB L2 cache, 800MHz FSB), FIO Kit	482110-L22
	Intel® Xeon® 3065 processor (2.33GHz, 4MB L2 Cache, 65 Watts, 1333MHz FSB), FIO Kit	450143-L22
	Intel® Xeon® E3110 processor (3.0GHz, 6MB L2 cache, 65 Watts, 1333MHz FSB), FIO Kit	463436-L22
	Intel® Xeon® processor E3120 processor (3.16 GHz, 6MB L2 cache, 65 Watts, 1333MHz FSB), FIO Kit	493241-L22
	Intel® Xeon® X3360 processor (2.83GHz, 12MB L2 cache, 95 Watts, 1333MHz Front Side Bus FSB), FIO Kit	493245-L22
	Intel® Xeon® X3330 processor (2.66 GHz, 6MB L2 cache, 95 Watts, 1333MHz FSB), FIO Kit	493243-L22
	Intel® Xeon® processor X3220 (2.40GHz, 8MB L2 cache, 1066MHz FSB)	533995-L22
	Intel® Xeon® X3210 processor (2.13GHz, 8MB L2 Cache, 95 Watts, 1066MHz FSB), FIO Kit	455031-L22
	Intel® Xeon® X3320 processor (2.5GHz, 6MB L2 cache, 95 Watts, 1333MHz FSB), FIO Kit	463434-L22
	Intel® Xeon® X3350 processor (2.66GHz, 12MB L2 cache, 95 Watts, 1333MHz FSB), FIO Kit	463432-L22
	Intel® Xeon® processor E5200 (2.50 GHz, 2MB L2 cache, xx65Watts, 800MHz Front Side Bus FSB, 2M)	533991-L22
	Intel® Xeon® processor E7400 (2.80 GHz, 3MB L2 cache, 65Watts, 1066MHz Front Side Bus FSB, 3M)	533993-L22

Configuration Information - Factory Integrated Models

Memory	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21
Hard Drives	NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.	
	SATA Non-Hot Plug Midline (MDL) Drives	
	HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
	HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
	HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21
	SATA Non-Hot Plug Entry (ETY) Drives	
	HP 160GB 3G SATA 7.2K NHP 3.5" ETY HDD	458947-B21
	SAS Enterprise (ENT) Drives 3.5" Drives, Non-Hot Plug	
	HP 400GB 3G SAS 10K 3.5" DP NHP ENT HDD	508232-B21
	HP 450GB 3G SAS 15K 3.5" DP NHP ENT HDD	454234-B21
	HP 300GB 3G SAS 15K 3.5" DP NHP ENT HDD	417950-B21
	HP 300GB 3G SAS 15K 3.5" SP NHP ENT HDD	431950-B21
	HP 146GB 3G SAS 15K 3.5" DP NHP ENT HDD	417855-B21
	HP 146GB 3G SAS 15K 3.5" SP NHP ENT HDD	432093-B21
	HP 72GB SAS 15K 3.5" SP NHP ENT HDD	432095-B21

Step 3: Choose Additional Options for Factory Integration (only one of the following fr each list unless otherwise noted)

Storage Controllers	SAS Controllers (Required if NHP SAS Hard Drive selected in Step 2)	
	HP Internal SAS/SATA 4-Port Cable NOTE: This cable option kit is automatically included in any CTO configuration when a HBA or SAS controller is selected.	457692-B21
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Smart Array P800/512 MB BBWC Controller	381513-B21
	SAS HBA	
	HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.	416096-B21
	HP SC40Ge Host Bus Adapter, FIO NOTE: When using the SC40Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required.	449363-B21

Step 4: Choose Additional Factory Integratable Options

NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.
NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

Core Options

NOTE: Some options may not be factory integratable. Contact your local sales representative for additional information.

Unique Options	DL120 G5 HP Lights Out 100c Kit	469085-B21
	NOTE: This remote management card supports the DL120 G5 server only.	
Memory (DIMMs)	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21
Optical Drives	HP Slim 12.7mm SATA DVD-ROM Optical Kit	481041-B21
	HP Slim 12.7mm SATA DVD-RW Optical Kit	481043-B21
Hard Drives	NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.	
	SATA Non-Hot Plug Midline (MDL) Drives	
	HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
	HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
	HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21
	SATA Non-Hot Plug Entry (ETY) Drives	
	HP 160GB 3G SATA 7.2K NHP 3.5" ETY HDD	458947-B21
	NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11940_div/11940_div.html (Worldwide)	
	SAS Non-Hot Plug 3.5" Enterprise (ENT) Drives	
	HP 400GB 3G SAS 10K 3.5" DP NHP ENT HDD	508232-B21
	HP 450GB 3G SAS 15K 3.5" DP NHP ENT HDD	454234-B21
	HP 300GB 3G SAS 15K 3.5" DP NHP ENT HDD	417950-B21
	HP 300GB 3G SAS 15K 3.5" SP NHP ENT HDD	431950-B21
	HP 146GB 3G SAS 15K 3.5" DP NHP ENT HDD	417855-B21
	HP 146GB 3G SAS 15K 3.5" SP NHP ENT HDD	432093-B21
	HP 146GB 3G SAS 15K 3.5" SP NHP ENT HDD	432093-B21
	HP 72GB SAS 15K 3.5" SP NHP ENT HDD	432095-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
	3.5" SATA Non-Hot Plug Drives	
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21

Core Options

NOTE: The previous generation of 1.5G SATA drives are still supported.
NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11940_div/11940_div.html (Worldwide)

Communications	HP NC110T PCI Express Gigabit Server Adapter NOTE: Does not support Windows 2000.	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter NOTE: Does not support Windows 2000.	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Additional Options

Storage Controllers	NOTE: The purchase of any HBA or HP Smart Array Controller requires the purchase of the 4 Lane SAS/SATA host fan out Cable Kit.	
	SAS Controllers	
	HP Internal SAS/SATA 4-Port Cable	457692-B21
	NOTE: The purchase of any HBA or HP Smart Array Controller requires the purchase of the 4 Lane SAS/SATA host fan out Cable Kit.	
	Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
	NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	
	Smart Array E500 Controller	
	HP Smart Array E500/256MB Controller	435129-B21
	Battery-backed write cache upgrade	383280-B21
	NOTE: Battery only.	
	512MB Battery-backed cache upgrade	405148-B21
	NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html (Smart Array E500 Controller)	
	HP Smart Array P800/512MB BBWC Controller	381513-B21
	HP SA-P400 and SA-E500 24 In Battery Cable Kit	417836-B21
	NOTE: This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array E500 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
	SAS HBA	
	NOTE: The purchase of any HBA or HP Smart Array Controller requires the purchase of the 4 Lane SAS/SATA host fan out Cable Kit. (P/N 457692-B21)	
	HP SC44Ge Host Bus Adapter	416096-B21
	NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS. NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA)	
	SCSI Controllers	
	NOTE: The HP ProLiant DL320 G5p PCI-X Riser Board Option Kit (P/N 450341-B21) is required for all PCI -X Controllers. This option is compatible with the DL120 G5.	
	PCI-X Riser Board	450341-B21
	SCSI HBA	
	HP SC11Xe Host Bus Adapter	412911-B21
	HP Internal SAS/SATA 4-Port Cable	457692-B21

Additional Options

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see:
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

USB Rack-Mount Tape Solutions

HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB Tape Drive — AG703A

SAS Rack-Mount Tape Solutions

NOTE: HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive — DW085A
NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A)

SCSI Rack-Mount Tape Solutions

NOTE: SCSI Controller required. HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.

HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 SCSI Tape Drive (Carbonite) — DW028B
NOTE: Pre-configured with one LTO-2 Ultrium 448 SCSI tape drive.

Disk-Based Backup

RDX Removable Disk Backup

HP StorageWorks RDX160 External Removable Disk Backup System — AJ766A
NOTE: 160GB of Disk Storage.

HP StorageWorks RDX320 External Removable Disk Backup System — AJ768A
NOTE: 320GB of Disk Storage.

HP StorageWorks RDX500 External Removable Disk Backup System — AJ935A
NOTE: 500GB of Disk Storage.

NOTE: Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html

D2D Backup

HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit — EH924A
NOTE: 2TB of Disk Storage.

HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive — EH952A
NOTE: 3TB of Disk Storage.

HP StorageWorks D2D2503i Backup System — EH945A
NOTE: 3TB of Disk Storage.

NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://www.hp.com/go/d2d

Additional Options

StorageWorks Options	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks 81E 8Gb Single Port PCI-e FC HBA	AJ762A
	HP StrorageWorks 82E 8Gb Dual Port PCI-e FC HBA	AJ763A
	HP StorageWorks 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A
	HP StorageWorks 81Q Single Port PCI-e FC HBA	AK344A
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
HP StorageWorks 50 Modular Smart Array	HP StorageWorks 50 Modular Smart Array NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)	364430-B21
HP StorageWorks 60 Modular Smart Array	HP StorageWorks 60 Modular Smart Array Enclosure NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html	418408-B21
HP StorageWorks 70 Modular Smart Array	HP StorageWorks 70 Modular Smart Array Enclosure NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html	418800-B21

Additional Options

Uninterruptible Power Systems – Rack	HP UPS R1500 G2	
	HP, R1.5kVA UPS, 1U, NA	AF419A
	HP, R1.5kVA UPS, 1U, INTL	AF418A
	HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)	
	HP UPS R3000 Uninterruptible Power System	
	HP R3000 VA UPS, 2U, DTC, INTL	AF414A
	HP R3000 VA UPS, 2U, L5-30, NA	AF422A
	HP R3000 VA UPS, 2U, L6-20, NA	AF423A
	HP R3000 VA UPS, 2U, L6-20, JPN	AF424A
	HP R3000 VA UPS, 2U, L5-30, JPN	AF425A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html (Worldwide)	
	HP R3000v UPS Uninterruptible Power System	
	HP R3000v UPS	AF444A
	NOTE: The R3000v is available in China and India only.	
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html (Worldwide)	
	HP UPS R5500 Uninterruptible Power System	
	HP R5500 VA UPS, INTL	AF416A
	HP R5500 VA UPS, NA/JPN	AF426A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)	
HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø, 24A (NA/JPN)	AF503A
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A (NA/JPN)	AF505A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 22.1 kVA S2316 Monitored PDU- dual input, 3Ø, 16A (INTL)	AF507A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 14.7 kVA S2132 Monitored PDU- dual input, 1Ø, 32A (INTL)	AF509A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A (NA/JPN)	AF916A
	HP 22 kVA S332 Monitored PDU - single input, 3-phase, 32A (INTL)	AF917A
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A

Additional Options

Modular Power Distribution Units 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) NOTE: This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide) NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	252663-B24
USB Options	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
ProLiant DL120 Deployment Options	Rack Adapter Kit NOTE: This kit allows HP rack servers to fit in racks that are 24" wide.	332815-B21
HP Rack 5000 Series (Metallic Carbonite)	HP 5642 Rack-Unassembled NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.html (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	358254-B21

Additional Options

HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	292302-B22

HP Rack 10000 G2 Series (Graphite Metallic)	10642 G2 (42U) Rack Cabinet – Pallet	AF001A
	10642 G2 (42U) Rack Cabinet – Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet – Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet – Pallet	AF011A
	10636 G2 (36U) Rack Cabinet – Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet – Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	

Additional Options

HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet – Shock Pallet NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	292302-B22

Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor US	AG052A
	TFT7600 Rackmount Keyboard Monitor UK	AG053A
	TFT7600 Rackmount Keyboard Monitor GR	AG054A
	TFT7600 Rackmount Keyboard Monitor FR	AG055A
	TFT7600 Rackmount Keyboard Monitor IT	AG056A
	TFT7600 Rackmount Keyboard Monitor SP	AG057A
	TFT7600 Rackmount Keyboard Monitor DEN	AG058A
	TFT7600 Rackmount Keyboard Monitor NOR	AG059A
	TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
	TFT7600 Rackmount Keyboard Monitor SWI	AG061A
	TFT7600 Rackmount Keyboard Monitor PORT	AG062A
	TFT7600 Rackmount Keyboard Monitor BEL	AG063A
	TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
	TFT7600 Rackmount Keyboard Monitor RUS	AG065A
	TFT7600 Rackmount Keyboard Monitor INTL	AG066A
	1U Rackmount Keyboard with USB, US	AG072A
	1U Rackmount Keyboard with USB, UK	AG073A
	1U Rackmount Keyboard with USB, GR	AG074A
	1U Rackmount Keyboard with USB, FR	AG075A
	1U Rackmount Keyboard with USB, ITL	AG076A
	1U Rackmount Keyboard with USB, SP	AG077A
	1U Rackmount Keyboard with USB, DEN	AG078A
	1U Rackmount Keyboard with USB, NOR	AG079A
	1U Rackmount Keyboard with USB, SE/FI	AG080A
	1U Rackmount Keyboard with USB, SWI	AG081A
	1U Rackmount Keyboard with USB, PORT	AG082A
	1U Rackmount Keyboard with USB, BEL	AG083A
	1U Rackmount Keyboard with USB, JPN2	AG084A
	1U Rackmount Keyboard with USB, RUS	AG085A
	1U Rackmount Keyboard with USB, INTL	AG086A
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.	

Additional Options

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x4 Console Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
HP Serial Console Server Options	Server console switch 0x2x8	AF616A
	Server console switch 0x2x16	AF617A
	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
Service and Support Offerings (HP Care Pack Services)	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UJ252E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UJ253E
	Hardware Services Next Business Day On-Site Service	
	9-Hour x 5-Day Coverage, 3 Years, Electronic	UJ251E
	Installation & Start-up Services	
	Hardware Services 6-Hour Call to Repair On-Site Service	UJ254E
	Hardware Installation, Electronic	UJ261E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/hps/	

Memory

HP ProLiant DL120 G5

Standard Memory

NOTE: One of the following depending on model:

1 GB installed (1 x 1 GB SDRAM DIMM) on Dual-Core (E2160 and 3065) models.

2 GB installed (2 x 1 GB SDRAM DIMMs) on Quad-Core (X3320) model.

Standard Memory Plus Optional Memory

Up to 8 GB memory is available with the optional installation of PC2-6400 ECC DDR2 SDRAM Memory kits.

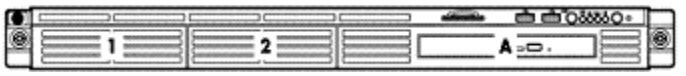
NOTE: The chart below does not represent all possible configurations. For best performance, HP recommends dual-bank interleaved mode configurations. For dual-bank interleaved mode, DIMMs must be installed in both banks with equal bank capacities.

Memory		Slot				
		DIMM_CH1_C	DIMM_CH1_A	DIMM_CH2_D	DIMM_CH2_B	Mode
Optional	512 MB	Empty	512 MB	Empty	Empty	Single-bank
Standard	1 GB	Empty	1 GB	Empty	Empty	Single-bank
Optional	1 GB	Empty	512 MB	Empty	512 MB	Dual-bank interleaved
Standard	2 GB	Empty	1 GB	Empty	1 GB	Dual-bank interleaved
Maximum	8 GB	2 GB	2 GB	2 GB	2 GB	Dual-bank interleaved

Following are memory options available from HP:

2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21

Storage



1- 2 Two SATA or SAS drive bays

A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
12.7mm IDE DVD-ROM or DVD-RW Drive	Up to 1	A	HP embedded SATA Controller NOTE: Transfer Rate: 1.5 Gb/s SATA

SAS Non-Hot Plug 3.5" Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
400GB 3G SAS 10K DP 450GB 3G SAS 15K DP 300GB 3G SAS 15K DP 300GB 3G SAS 15K SP 146GB 3G SAS 15K DP 146GB 3G SAS 15K SP 72GB 3G SAS 15K SP	Up to 2	1-2	HP 4 Internal Port SAS HBA SC40Ge with RAID (0,1, 1+0) NOTE: When using the SC40Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required NOTE: Transfer Rate: 1.5 Gb/s SATA, 3Gb/s SAS

SATA Non-Hot Plug Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
750GB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 2	1-2	6 Port SATA controller with Embedded RAID NOTE: Transfer Rate: 1.5 Gb/s SATA

SATA Non-Hot Plug Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
160GB 3G SATA 7.2K	Up to 2	1-2	6 Port SATA controller with Embedded RAID NOTE: Transfer Rate: 1.5 Gb/s SATA

3.5" SATA Non-Hot Plug Drives

	Quantity Supported	Position Supported	Controller
250GB 1.5G SATA 7.2K 160GB 1.5G SATA 7.2K	Up to 2	1-2	6 Port SATA controller with Embedded RAID NOTE: Transfer Rate: 1.5 Gb/s SATA

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller
	Up to 4		HP Smart Array P800/512MB BBWC Controller
60 Modular Smart Array Enclosure	Up to 8 Up to 8	External	HP Smart Array E500/256MB Controller HP Smart Array P 800/512MB BBWC Controller
70 Modular Smart Array Enclosure	Up to 4 Up to 4	External	HP Smart Array E500/256MB Controller HP Smart Array P 800/512MB BBWC Controller

Maximum Storage Capacity – (SAS drives)

Internal	900GB (2 x 450GB SAS)
External	6.30TB (1 x (14 x 450GB SAS))
Total	7.20TB

NOTE: The External capacity section relates to the HP StorageWorks 20 Modular Smart Array.

Maximum Storage Capacity – (SATA Drives)

Internal	1.5TB (2 x 750GB SATA)
External	9.0TB [1 x (12 x 750GB SATA)]
Total	10.50TB

NOTE: In order to implement integrated SATA RAID with Support CD on Windows 2000/2003, the use of a floppy drive is necessary.

NOTE: The External capacity section relates to the HP StorageWorks 20 Modular Smart Array.

Tape and Disk-Based Backup

NOTE: For a complete listing of compatible tape and disk-based backup offerings, please visit: www.hp.com/go/connect

	Position Supported	Controller	Controller Part Number
HP StorageWorks USB Tape DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives, External LTO-2 Ultrium 448 SAS 1U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter	416096-B21
HP StorageWorks SCSI Tape Ultrium 448 DAT 72 DAT 160 1U SCSI Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21

Storage

HP StorageWorks RDX Removable Disk Backup System RDX160 RDX320	External	USB 2.0 Port	N/A
HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2503i	External	Embedded Network Controller	N/A

System Unit	Dimensions (H x W x D) (with bezel)	1.69 x 17.64 x 27.5 in (4.30 x 44.80 x 69.85 cm)	
	Weight (approximate)	Maximum (two hard drives, power supply, and processor installed)	32.40 lb (14.70kg)
		Minimum (one hard drive, power supply, and processor installed)	31.00lb (14.00kg)
	Input Requirements (per power supply)	Range Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	6 A (at 100 VAC), 3 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	<500W @115/230 VRMS (For frequency only)
	BTU Rating	Maximum	1194 BTU/hr (at 115/230 VRMS)
	Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient. - Click on the system of interest. Example: DL120 G5 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	350 W (at 115/230 VRMS), 350 W (at 115/230 VRMS)
		Maximum Peak Power	350 W (at 115/230 VRMS), 350 W (at 115/230 VRMS)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 300 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		LWAd	6.26 B
		LpAm	43.8 dBA
		Operating	
		LWAd	6.28 B
		LpAm	44.5 dBA
	Emissions Classification (EMC)	FCC Rating	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	
Power Supply	Input voltage specifications	Rated input voltage	100 VAC to 240 VAC
	Input Specifications	Rated input line	90 VAC to 264VAC
		Frequency range	47 to 63 Hz
		Rated input power	@ 115V input, Rated input power = 500W (assume output wattage=350W @ 230V input, Rated input power = 500W (assume output wattage=350W)
		Rated input current	6 A, 3 A (110 V, 220 V)
		Steady state power	350W (rated)
	BTU Rating	1710 BTU/hr	
	Ambient temperature range	Operating	50° to 118° F (10° to 48° C)
		Non-operating	-40° to 158° F (-40° to 70° C)
	Relative humidity (non-condensing)	Operating	55% to 85%
		Non-operating	5% to 95%
	Dielectric voltage withstand	Input to output	
		Input to ground	
	Maximum Wet Bulb Temperature	106.3° F (41.3° C)	

Technical Specifications

Integrated Serial ATA Controller	Simultaneous drive transfer channels	4 channels
	Transfer rate synchronous (maximum theoretical)	150 MB/s per channel; 300 MB/s in RAID 0 pair
	Data transfer method	Intel® 82801IR Integrated Serial ATA Host Controller (non-RAID mode) Intel® 82801IR Integrated Serial ATA Host Controller (RAID Mode)
	Drive support	Serial ATA
	Data transfer modes	Legacy Mode Combined Mode
	Protocol	Serial ATA
	Feature	NCQ (Native Command Queuing); AHCI (Advanced Host Controller Interface)
	RAID levels supported	0, 1
	RAID Features	Supports multiple logical volumes Setup through ROM based Array Configuration Utility Installation scripting support NOTE: This controller does not support Hot Plug functions or LED functions.
	RAID OS Support	Microsoft Windows Server 2003 NOTE: In order to implement integrated SATA RAID with Smart Start 7.90 on Windows 2000/2003, the use of a floppy drive is necessary. Linux (Red Hat, SuSE, UnitedLinux)

Embedded NC105i PCIe Gigabit Server Adapter	Network Interface	10Base-T/ 100Base-TX/ 1000Base-TX	
		Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	Four lane (x4), 100MHz PCI Express Reference Clock	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	RJ-45 connector	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.